Title V Air Operation Permit Revision
Permit No. 1050233-028-AV

APPLICANT

The applicant for this project is Tampa Electric Company (TEC). The applicant's responsible official and mailing address are: Karen Sheffield, Director Polk Power Station, TEC, Polk Power Station, Post Office Box 111, Tampa, Florida 33601-0111.

FACILITY DESCRIPTION

The regulated emissions units (EU) at this existing solid fuel gasification facility include a 260 megawatt (MW) combined cycle combustion turbine (CCCT, EU 001) which fires syngas or No. 2 fuel oil; an auxiliary boiler (EU 003) which fires No. 2 fuel oil; a sulfuric acid plant (EU 004); a solid fuel handling system (EU 005); and a solid fuel gasification system (EU 006). These emission units comprise Unit 1 at the facility. In addition, the facility has two nominal 165 MW simple cycle gas turbines (EU 009 and 010) firing either natural gas or No. 2 fuel oil which comprise Units 2 and 3 at the facility. Finally, the facility has two nominal 165 MW simple cycle gas turbines (EU 013 and 014) firing only natural gas which comprise Units 4 and 5 at the facility.

PROJECT DESCRIPTION

This project incorporates the revisions being made concurrently in Project Nos. 1050233-029-AC (PSD-FL-194J) for IGCC Unit 1 and 1050233-032-AC (PSD-FL-263B and PSD-363C) for combustion turbine Units 2, 3, 4, and 5. See the Technical Evaluation and Preliminary Determination for details of these changes. This project also revises the visible emissions monitoring requirement for the sulfuric acid plant. These documents along with all other associated documents in the issued draft/proposed permit package can be accessed by entering file number in the permit number field at the web link given below.

http://www.dep.state.fl.us/air/emission/apds/default.asp

PROCESSING SCHEDULE

02/28/2012: Received an application for a Title V air permit revision to change the auxiliary boiler fuel sulfur monitoring requirement and sulfur dioxide emission limit and the VE monitoring requirement for the sulfuric acid plant along with other changes (**Project 1**).

03/08/2012: Received an application for concurrent air construction permit revision for **Project 1**.

04/23/2012: Issued Air Construction Permit and draft/proposed Title V Air Permit revisions for **Project 1**.

05/17/2012: TEC requested an extension of time to petition for a formal administrative hearing until the close of business on July 6, 2012 for **Project 1**.

05/21/2012: Received an application for concurrent air construction permit and Title V air permit revision to convert the backup and startup fuels of Unit 1 from fuel oil and propane to natural gas (**Project 2**).

06/26/2012: TEC requested a second extension of time to petition for a formal administrative hearing until the close of business on August 6, 2012 for **Project 1**.

07/18/2012: Received a request from TECO to combine the two projects.

08/06/2012: TEC requested a third extension of time to petition for a formal administrative hearing until the close of business on August 6, 2012 for the combined projects.

08/20/2012: TEC requested a third extension of time to petition for a formal administrative hearing until the close of business on September 07, 2012 for the combined projects.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not a major source of hazardous air pollutants (HAP).

Title IV: The facility operates units subject to the acid rain provisions of the Clean Air Act.

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Title V: The facility is a Title V or "major source" of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C).

PSD: The facility is a PSD-major facility pursuant to Rule 62-212, F.A.C.

New Source Performance Standards (NSPS): EU 003 is subject to 40 Code of Federal Regulations (CFR) 60, subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. EU 005 is subject to 40 CFR 60, Subpart Y, Standards of Performance for Coal Preparation Plants. EU 001, 009, 010, 013 and 014 are subject to 40 CFR 60, subpart GG (Standards of Performance for Stationary Gas Turbines).

NESHAP: The combustion turbines are not subject to 40 CFR 63, subpart YYYY (National Emissions Standard for Hazardous Air Pollutants for Stationary Combustion Gas Turbines) because the facility is not a major source of HAP.

CAIR: The facility is subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

Siting: This plant is subject to certain requirements of Chapter 403, Part II, Florida Statutes, Electric Power Plant and Transmission Line Siting, including a modification of the conditions Site Certification PA92-32.

CAM: Water injection for nitrogen oxides (NO_X) control is the only add on pollution control device used at the facility; however, the units are not subject to compliance assurance monitoring (CAM) provisions because continuous emissions monitors (CEMS) are used to demonstrate compliance with the applicable standards for nitrogen oxides (NO_X) for EU 001, 009, 010, 011 and 012 a CAM plan is not required.

PROJECT REVIEW

Project Nos. 1050233-029-AC (PSD-FL-194J) and 1050233-032-AC (PSD-FL-263B and PSD-363C)

This permit revision incorporates the changes made concurrently in Project Nos. 1050233-029-AC (PSD-FL-194J) for IGCC Unit 1 and 1050233-032-AC (PSD-FL-263B and PSD-363C) for combustion turbine Units 2, 3, 4, and 5.

Brief descriptions of the changes made as a result of the two construction permit modifications follow:

Project No. 1050233-029-AC (PSD-FL-194J): This project will make the following revisions: changes the heat input rate to CCCT (EU 001) from a maximum to a design basis and changes the fuel heat input rate from a higher heating value to a lower heating value basis; monitoring provisions for the fuel sulfur and sulfur dioxide limits for the auxiliary boiler (EU 003); monitoring requirements for the blend of coal and petcoke for the solid fuel gasification system (EU 006); authorization of natural gas to replace distillate oil in the auxiliary boiler (EU 003); authorization of natural gas to replace propane in the burners for both the sulfuric acid plant hydrogen sulfide to sulfur dioxide conversion furnace burners and the sulfur trioxide converter preheater burners; authorization of natural gas to replace propane in the solid fuel gasifier preheater; authorization of natural gas to replace distillate oil as a back-up fuel for the Unit 1 combustion turbine (EU 001); and authorization of natural gas to augment syngas firing in the CCCT. Once the gas conversion projects are complete, the distillate oil requirements will become obsolete and be superseded by requirements related to natural gas. Also, redundant and obsolete permit conditions are removed. Since the revisions are extensive, this permit is being re-issued in its entirety.

Project No. 1050233-032-AC (PSD-FL-263B and PSD-FL-363C):

This project will make the following revisions: minor changes to the nitrogen oxide reporting requirements when firing natural gas and distillate oil for combustion turbine Units 2 and 3 (EU 009 and 010); the fuel monitoring schedule for combustion turbine Units 2 and 3 (EU 009 and 010); replace the advance notice for tuning with a requirement to report tuning in the quarterly reports for Units 4 and 5 (EU 013 and 014); correct identification numbers of Units 4 and 5 from EU 011 and 012 to EU 013 and 014, respectively, to match what is currently in the Department's Air Resource Management System database.

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See the Technical Evaluation and Preliminary Determination for much more detailed descriptions of these changes.

This Title V air operation permit revision incorporates all of the changes made in the concurrent air construction permits. In addition, it revises the requirement to conduct daily visible emissions observations on the sulfuric acid plant from daily to quarterly tests, with the possibility of annual tests if no visible emissions are observed. Finally, the identification numbers for Units 4 and 5 were corrected from EU 011 and 012 to EU 013 and 014, respectively, throughout the permit. These two changes are described below by applicant's request followed by the Department's response. The previous draft/proposed permit package will be rescinded and replaced with a revised draft/proposed package for the combined projects.

Sulfuric Acid Plant (EU 004) – Visible Emissions Observations

Applicant Request

The applicant requests relief from the requirement to conduct daily visible emissions observations from the sulfuric acid plant, which was required in original Title V Permit No. 1050233-001-AV to resolve an objection by EPA Region 4 dated January 22, 1999. This requirement was added only to the Title V permit and is not part of any air construction permit. In the current Title V permit, Specific Condition C.10 states:

C.10. Monitoring - Visible Emission Observation. The owner or operator shall observe and record a quantified visible emission observation, six minutes in duration, for the sulfuric acid plant on a daily basis, for the purpose of periodic monitoring. [Rule 62-213.440(1)(b)1.b. (Periodic Monitoring), F.A.C. {Resolution of objection from USEPA dated 01/22/1999.}]

Based on numerous observations demonstrating compliance, the Applicant has requested that this requirement be removed.

Department Response

Specific condition C.5 of the current Title V permit limits visible emissions from the sulfuric acid plant to 10% opacity. The proposed Title V permit only required VE testing every 5 years. The applicant submitted daily visible emissions observations on the sulfuric acid plant made from 2009 to 2011. During this period, all observations indicate zero percent opacity. The original purpose of the daily monitoring was to provide reasonable assurance to the EPA that the sulfuric acid plant was operating properly and the sulfur dioxide and sulfuric acid mist emissions were within the specified permit limits.

Based on the data provided by the applicant, it appears that the original purpose of the daily monitoring has been met. Consequently, daily visible emissions observations are no longer required. The Department will remove the daily VE monitoring requirement of condition C.10 and rely on the 10% VE requirement of condition C.5. Based on recent discussions with the EPA Region 4 regarding removal of this requirement, Condition C.14 (Annual Compliance Tests) will be revised to require quarterly visible emissions observations for a period of eight consecutive quarters, utilizing EPA Method 9 to demonstrate compliance with standard. If the test results for the eight consecutive quarters show no visible emissions above 5% opacity, the permittee may discontinue these quarterly tests with only annual VE testing required thereafter. This new quarterly VE testing requirement, which could lead eventually to annual testing, will continue to provide reasonable assurance that the sulfuric acid plant will meet its permitted emission limit. The requirements to conduct annual emission testing for SO_2 and prior to renewal for sulfuric acid mist remain.

Emission Unit ID Changes for Units 4 and 5

Applicant Request

Finally, the applicant requests clarification that the emission unit ID numbers for Units 4 and 5 be changed from EU 011 and 012 to EU 013 and 014, respectively, to be consistent with the Department's ARMS database.

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Department Response

The Department agrees to this correction and it will be changed throughout the permit.

CONCLUSION

This project revises Title V air operation permit (DEP File No. 1050233-026-AV), which was issued on November 24, 2009. This Title V Air Operation Permit Revision is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C. In accordance with the terms and conditions of this permit, the above named permittee is hereby authorized to operate the facility as shown on the application and approved drawings, plans, and other documents, on file with the permitting authority.

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